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ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/2
19702A GSRS, MISSILE NUMBER 302, ROUND NUMBER B-20.(U)
JUN 79

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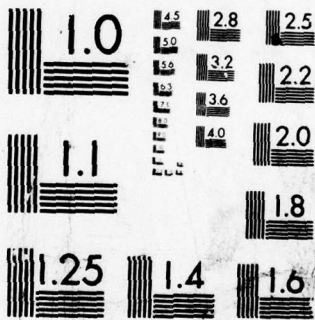
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JUNE 1979

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METEOROLOGICAL DATA REPORT

19702A GSRS
Missile No. 302
Round No. B-20
25 JUNE 1979

by

White Sands Meteorological Team

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ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

ECOM

UNITED STATES ARMY ELECTRONICS COMMAND

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REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER DR 1033	2. GOVT ACCESSION NO. (14) ERADCOM/ASL-DR-1033	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) (6) 19702A GSRS, Missile Number 302, Round Number B-20,	5. TYPE OF REPORT & PERIOD COVERED	
7. AUTHOR(s)	6. PERFORMING ORG. REPORT NUMBER	
9. PERFORMING ORGANIZATION NAME AND ADDRESS White Sands Meteorological Team (9) Meteorological data rept.	8. CONTRACT OR GRANT NUMBER(s)	
11. CONTROLLING OFFICE NAME AND ADDRESS US Army Electronics Research & Development Comd Atmospheric Sciences Laboratory White Sands Missile Range, New Mexico	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS DA Task 1T665-2D126-02 (16) (17)	
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) US Army Electronics Research & Development Comd	12. REPORT DATE (11) JUN 79 (12) 17p	
	13. NUMBER OF PAGES	
	15. SECURITY CLASS. (of this report) UNCLASSIFIED	
	15a. DECLASSIFICATION/DOWNGRADING SCHEDULE	
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) 1. Ballistics 2. Meteorology 3. Wind		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of 19702A GSRS, Missile Number 302, Round Number B-20, are presented in tabular form.		

79 08 27 044

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INTRODUCTION

19702A GSRS, Missile Number 302, Round Number B-20, was launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 0853 MDT, 25 June 1979. The scheduled launch time was 0845 MDT.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations

a. Surface

(1) Standard surface observations to include pressure, temperature ($^{\circ}\text{C}$), relative humidity, dew point ($^{\circ}\text{C}$), density (gm/m^3), wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air

(1) Low level wind data were obtained from RAPTS T-9 pibal observation at:

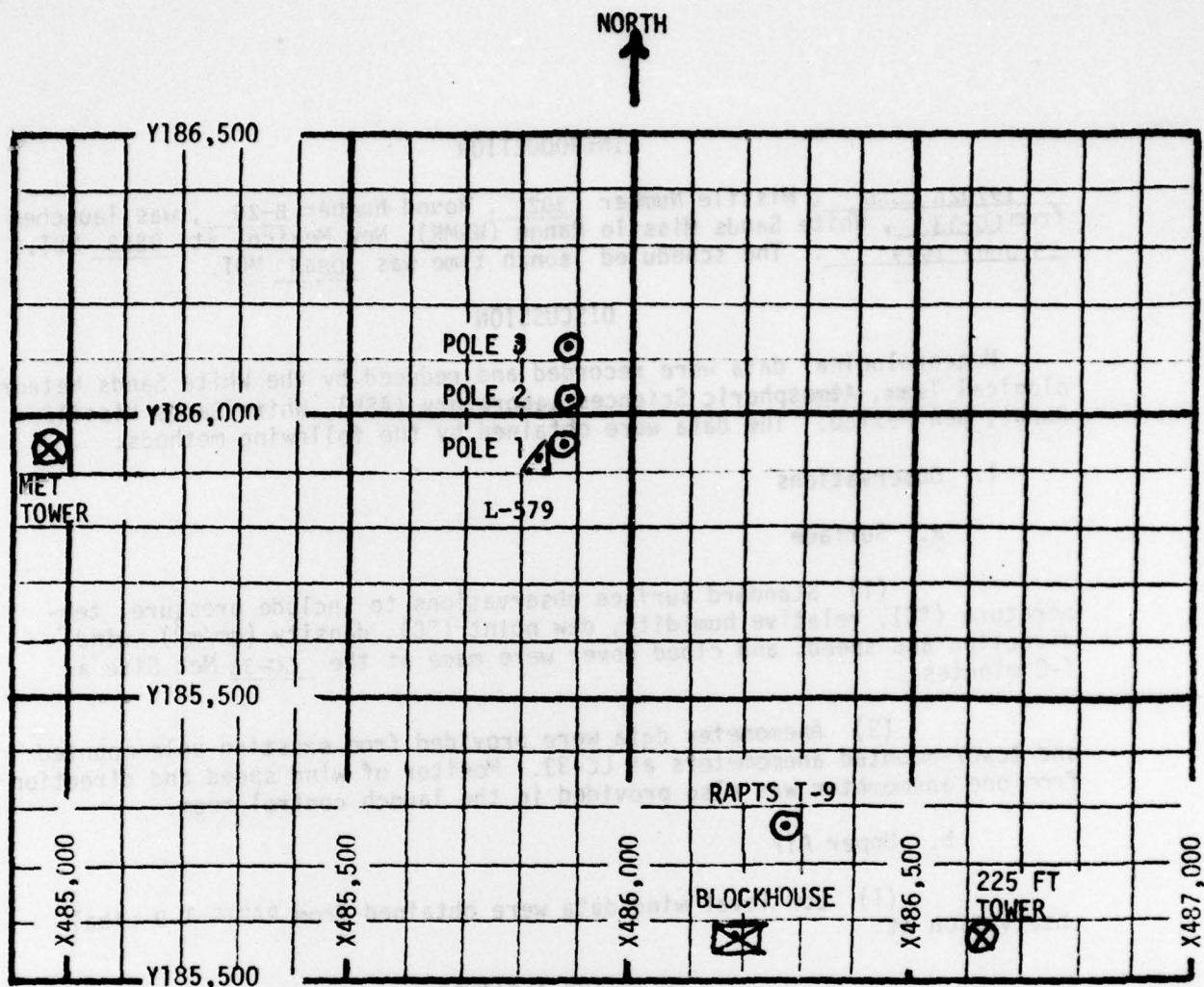
SITE AND ALTITUDE

LC-33	1080 Meters	0835 MDT
	1080 Meters	0855 MDT

(2) Air structure data (rawinsonde) were collected at the following Met Sites. Data were collected from surface to 27,500 feet in 500-foot increments.

SITE AND TIME

SMR 0745 MST



1. MET TOWER - 4 Bendix Model T-120 Anemometers at 12 ft, 62 ft, 102 ft and 202 ft with E/A recorders.
2. POLE ANEMOMETER - Bendix Model T-120 with E/A recorders.
 - (a) Pole #1 - 38.7 ft
 - (b) Pole #2 - 53.0 ft
 - (c) Pole #3 - 83.6 ft
3. 225 FT WIND TOWER - 5 Bendix Model T-120 Anemometers at 35 ft, 88 ft, 128 ft, 168 ft and 200 ft with 5 X-Y visual indicators in Blockhouse.
4. RAPTS T-9 - Radar Automatic Pilot-Balloon Tracking System T-9 Radar

TABLE 1. SURFACE OBSERVATION TAKEN AT LC-33
25 JUNE 1979 AT 0845 MDT, 19702A GSRS,
MISSILE NO. 302, ROUND NO. B-20

ELEVATION	3977.30	FT/MSL
PRESSURE	884.7	MBS
TEMPERATURE	23.9	°C
RELATIVE HUMIDITY	52	%
DEW POINT	13.4	°C
DENSITY	1029	GM/M ³
WIND SPEED	02	MPH
WIND DIRECTION	160	DEGREES
CLOUD COVER	1	AC

TABLE 2. LC-33 FIXED POLE ANEMOMETER-MEASURED WINDS

POLE #1			POLE #2			POLE #3		
T-TIME SEC	DIR DEG	SPEED MPH	T-TIME SEC	DIR DEG	SPEED MPH	T-TIME SEC	DIR DEG	SPEED MPH
-30	M	03	-30	141	02	-30	122	06
-20	126	03	-20	132	02	-20	136	05
-10	114	03	-10	126	03	-10	125	07
0.0	M	04	0.0	127	03	0.0	113	07
+10	107	05	+10	128	04	+10	120	07

Type 19702A GSRS, Missile No. 302, Round No B-20 launched
from LC-33 on 25 June 1979 at 0853 MDT.

POLE #1 = X485,874.29 Y185,958.90 H4018.74 38.7 ft. AGL

POLE #2 = X485,874.93 Y186,012.00 H4033.57 53.0 ft. AGL

POLE #3 = X485,877.29 Y186,116.06 H4063.92 83.6 ft. AGL

NOTE: Wind directions are referenced to the firing azimuth _____
or true north True North.

TABLE 3. LC-33 METEOROLOGICAL TOWER ANEMOMETER-MEASURED WINDS (202 FT. TOWER)

LEVEL #1 12 ft.			LEVEL #2 62 ft.		
T-TIME SEC	DIR DEG	SPEED MPH	T-TIME SEC	DIR DEG	SPEED MPH
-30	123	07	-30	113	07
-20	118	06	-20	117	07
-10	114	06	-10	115	07
0.0	112	06	0.0	111	06
+10	113	05	+10	110	06
LEVEL #3 102 ft.			LEVEL #4 202 ft.		
T-TIME SEC	DIR DEG	SPEED MPH	T-TIME SEC	DIR DEG	SPEED MPH
-30	125	06	-30	107	06
-20	127	05	-20	107	06
-10	127	05	-10	123	07
0.0	126	06	0.0	122	06
+10	126	06	+10	122	07

WTSM Coordinates: X484,982.64 Y185,957.73 H3983.00 (base)

Type 19702A GSRS, Missile No. 302, Round No. B-20 launched
from LC-33 on 25 June 1979 at 0853 MDT.

NOTE: Wind directions are referenced to the firing azimuth _____
or true north True North.

TABLE 4. PILOT-BALLOON-MEASURED WIND DATA (30-METER INCREMENTS)

HEIGHT METERS AGL	DIRECTION DEGREES	SPEED MPH
SFC	130	03.0
30	145	03.0
60	160	02.5
90	175	02.5
120	189	02.0
150	191	03.5
180	193	05.0
210	195	06.5
240	197	07.5
270	196	08.0
300	194	08.0
330	192	08.0
360	190	08.0

HEIGHT METERS AGL	DIRECTION DEGREES	SPEED MPH
390	191	08.0
420	192	08.0
450	193	08.0
480	194	08.0
510	207	07.5
540	220	06.5
570	233	06.0
600	245	05.0
630	224	05.0
660	203	04.5
690	182	04.0
720	160	03.5
750	153	04.0

Release Point Coordinates (WSTM): X486,037.24 Y486,037.24 H3977.30

Released from LC-33 on 25 June 1979 at 0835 MDT.

Type 19702A GSRS, Missile No. 302, Round No. B-20 launched from LC-33 on 25 June 1979 at 0853 MDT.

NOTE: Wind directions are referenced to the firing azimuth or true north True North.

HEIGHT METERS AGL	DIRECTION DEGREES	SPEED MPH
780	146	04.0
810	139	04.0
840	132	04.0
870	126	04.0
900	119	05.0
930	112	05.5
960	105	05.5
990	101	05.5
1020	097	05.5
1050	093	05.5
1080	089	05.5
1110		
1140		
1170		
1200		
1230		
1260		
1290		
1320		
1350		
1380		
1410		

HEIGHT METERS AGL	DIRECTION DEGREES	SPEED MPH
1440		
1470		
1500		
1530		
1560		
1590		
1620		
1650		
1680		
1710		
1740		
1770		
1800		
1830		
1860		
1890		
1920		
1950		
1980		
2010		
2040		
2070		

TABLE 5. PILOT-BALLOON-MEASURED WIND DATA (30-METER INCREMENTS)

HEIGHT METERS AGL	DIRECTION DEGREES	SPEED MPH
SFC	160	02.0
30	148	02.0
60	136	01.5
90	124	01.0
120	112	00.5
150	109	02.0
180	106	03.5
210	103	05.0
240	099	06.5
270	104	07.0
300	108	07.5
330	113	08.0
360	117	08.5

HEIGHT METERS AGL	DIRECTION DEGREES	SPEED MPH
390	116	09.5
420	115	10.0
450	114	10.5
480	113	11.0
510	113	10.5
540	113	10.0
570	113	09.5
600	112	09.0
630	125	08.0
660	137	07.0
690	150	06.0
720	162	04.5
750	184	05.0

Release Point Coordinates (WSTM): X486,037.24 Y486,037.24 H3977.30

Released from LC-33 on 25 June 1979 at 0853 MDT.

Type 19702A GSRS, Missile No. 302, Round No B-20 launched from LC-33 on 25 June 1979 at 0853 MDT.

NOTE: Wind directions are referenced to the firing azimuth or true north True North.

HEIGHT METERS AGL	DIRECTION DEGREES	SPEED MPH
780	205	05.0
810	227	05.0
840	248	05.0
870	241	04.5
900	234	04.0
930	227	03.5
960	220	03.0
990	226	02.5
1020	232	02.0
1050	238	01.5
1080	243	01.0
1110		
1140		
1170		
1200		
1230		
1260		
1290		
1320		
1350		
1380		
1410		

HEIGHT METERS AGL	DIRECTION DEGREES	SPEED MPH
1440		
1470		
1500		
1530		
1560		
1590		
1620		
1650		
1680		
1710		
1740		
1770		
1800		
1830		
1860		
1890		
1920		
1950		
1980		
2010		
2040		
2070		

STATION ALTITUDE 3997.30 FEET MSL
25 JUNE 79 0745 HRS MST
ASCENSION NO. 205

SIGNIFICANT LEVEL DATA
1760060205
S M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
883.8	3997.3	25.4	12.6	45.0
857.2	4877.6	23.6	11.3	46.0
850.0	5120.1	24.2	11.9	46.0
817.8	6229.3	23.3	8.2	38.0
750.8	8651.5	16.8	3.5	41.0
700.0	10597.5	11.9	2.1	51.0
659.4	12230.9	7.8	-4	56.0
633.0	13333.8	5.1	-6.1	44.0
557.0	16719.5	-2.7	-10.9	53.0
514.4	18772.8	-8.6	-13.1	70.0
501.2	19433.7	-10.5	-18.4	52.0
500.0	19494.6	-9.6	-18.0	50.0
493.4	19832.4	-9.2	-29.7	17.0
485.6	20237.9	-9.0	-30.1	16.0
426.2	23503.7	-17.9	-35.3	20.0
400.0	25052.7	-21.8	-38.6	20.0
388.4	25763.5	-23.4	-40.0	20.0
377.6	26442.9	-23.1	-40.2	19.0
364.2	27310.5	-25.1	-41.9	19.0
357.8	27734.8	-24.7	-41.6	19.0

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

UPPER AIR DATA
1760060205
S M R

STATION ALTITUDE 3997.30 FEET MSL
25 JUNE 79 0745 HRS MST
ASCENSION NO. 205

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
3997.3	883.8	25.4	12.6	45.0	1024.8	675.3	150.0	2.9	1.000291
4000.0	883.7	25.4	12.6	45.0	1024.7	675.2	150.1	2.9	1.000291
4500.0	868.5	24.4	11.9	45.6	1010.8	674.0	167.1	2.4	1.000285
5000.0	853.6	23.5	11.0	46.0	994.9	673.5	189.4	2.3	1.000280
5500.0	838.8	23.9	10.6	43.3	978.1	673.4	211.6	2.4	1.000273
6000.0	824.4	23.5	9.0	39.7	963.0	672.7	226.8	2.8	1.000264
6500.0	810.0	22.6	7.7	38.3	949.5	671.6	164.3	1.0	1.000257
7000.0	795.9	21.2	6.7	39.0	937.4	670.0	88.4	2.4	1.000252
7500.0	781.9	19.9	5.7	39.6	925.4	668.4	65.5	3.8	1.000247
8000.0	768.3	18.5	4.8	40.2	913.6	666.8	58.9	5.3	1.000242
8500.0	754.8	17.2	3.8	40.8	902.0	665.2	68.3	6.0	1.000237
9000.0	741.4	15.9	3.3	42.8	890.0	663.7	77.1	6.6	1.000233
9500.0	728.2	14.7	3.0	45.4	878.0	662.2	92.0	6.3	1.000230
10000.0	715.2	13.4	2.6	47.9	866.1	660.8	104.0	5.6	1.000227
10500.0	702.5	12.1	2.2	50.5	854.4	659.3	109.6	3.0	1.000224
11000.0	689.8	10.9	1.5	52.2	842.8	657.8	145.7	3.3	1.000220
11500.0	677.3	9.6	.7	53.8	831.3	656.3	309.4	3.4	1.000216
12000.0	665.0	8.4	-.0	55.3	820.0	654.8	313.2	6.9	1.000212
12500.0	652.9	7.1	-1.8	53.1	808.9	653.2	334.4	8.7	1.000206
13000.0	640.9	5.9	-4.3	47.6	797.9	651.7	347.4	11.3	1.000199
13500.0	629.0	4.7	-6.3	44.4	786.8	650.1	7.3	12.9	1.000194
14000.0	617.3	3.6	-7.0	45.8	775.4	648.8	21.3	15.7	1.000191
14500.0	605.7	2.4	-7.7	47.1	764.1	647.4	31.1	15.8	1.000187
15000.0	594.4	1.3	-8.4	48.4	753.0	646.0	40.7	16.2	1.000184
15500.0	583.3	.1	-9.1	49.8	742.1	644.6	45.7	15.4	1.000181
16000.0	572.3	-1.0	-9.8	51.1	731.3	643.3	50.8	14.6	1.000178
16500.0	561.6	-2.2	-10.6	52.4	720.8	641.9	42.9	13.8	1.000175
17000.0	551.0	-3.5	-11.1	55.3	710.6	640.3	32.6	13.5	1.000172
17500.0	540.4	-4.9	-11.6	59.5	700.7	638.6	23.5	14.7	1.000169
18000.0	530.0	-6.4	-12.1	63.6	691.0	636.9	16.9	16.3	1.000167
18500.0	519.9	-7.8	-12.7	67.7	681.4	635.1	18.3	17.8	1.000164
19000.0	509.8	-9.3	-14.8	63.8	672.0	633.3	18.8	19.5	1.000160
19500.0	499.9	-9.6	-18.2	49.5	660.0	632.8	16.6	21.4	1.000155
20000.0	490.2	-9.1	-29.9	16.6	646.5	633.2	14.3	23.3	1.000147
20500.0	480.5	-9.7	-30.5	16.3	635.2	632.4	11.5	25.1	1.000144
21000.0	471.0	-11.1	-31.3	16.9	625.9	630.8	9.1	26.4	1.000142
21500.0	461.7	-12.4	-32.0	17.5	616.8	629.1	6.9	27.0	1.000140
22000.0	452.6	-13.8	-32.8	18.2	607.7	627.5	5.8	26.7	1.000138
22500.0	443.6	-15.2	-33.5	19.9	598.2	625.8	5.7	25.6	1.000135
23000.0	434.9	-16.5	-34.5	19.4	590.2	624.2	3.9	23.5	1.000133

STATION ALTITUDE 3997.30 FEET MSL
25 JUNE 79 0745 HRS MST
ASCENSION NO. 205

UPPER AIR DATA
176060205
S M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (TN) SPEED KNOTS	INDEX OF REFRACTION
23500.0	426.3	-17.9	-35.3	20.0	581.6	622.5	.1	1.000131
24000.0	417.6	-19.1	-36.4	20.0	572.6	621.0	357.1	1.000129
24500.0	409.2	-20.4	-37.4	20.0	563.8	619.4	354.5	1.000127
25000.0	400.9	-21.7	-38.5	20.0	555.2	617.9	353.6	1.000125
25500.0	392.7	-22.8	-39.5	20.0	546.3	616.5	353.5	1.000123
26000.0	384.6	-23.3	-40.1	19.7	536.1	615.9	346.4	1.000121
26500.0	376.7	-23.2	-40.3	19.0	525.0	615.9	327.6	1.000118
27000.0	368.9	-24.4	-41.3	19.0	516.6	614.5		1.000116
27500.0	361.3	-24.9	-41.8	19.0	507.0	613.8		1.000114

STATION ALTITUDE 3997.30 FEET MSL
 25 JUNE 79 0745 HRS MST
 ASCENSION NO. 205

MANDATORY LEVELS
 1760060205
 S M R

GEODETIC COORDINATES
 32.48034 LAT DEG
 106.42307 LON DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	5116.	24.2	11.9	46.	194.9	2.3
800.0	6853.	21.6	7.0	39.	98.0	1.9
750.0	8674.	16.7	3.5	41.	71.1	6.3
700.0	10587.	11.9	2.1	51.	111.9	2.5
650.0	12606.	6.9	-2.4	52.	337.8	9.3
600.0	14745.	1.8	-8.0	48.	36.1	16.0
550.0	17027.	-3.6	-11.2	56.	31.8	13.5
500.0	19467.	-9.6	-18.0	50.	16.6	21.4
450.0	22123.	-14.2	-33.1	16.	5.8	26.4
400.0	25010.	-21.8	-38.6	20.	353.6	14.3

STATION ALTITUDE 3997.30 FEET MSL
 25 JUNE 79 0745 HRS MST
 ASCENSION NO. 205

MRN MANDATORY LEVELS
 1760060205
 S M R

GEODETIC COORDINATES
 32.48034 LAT DEG
 106.42307 LON DEG

GEOPOTENTIAL ALTITUDE DECAMETERS	DIRECTION DEG (TN)	WIND DATA SPEED MPS	N-S MPS	E-W MPS	DEW PT DEP DEG C	TEMPERATURE		PRESSURE MILLIBARS
						AIR DEG C		
762.	354.	7.	-7.	1.	17	-21.8		4.000+2
674.	6.	14.	-14.	-1.	19	-14.2		4.500+2
593.	17.	11.	-11.	-3.	08	-9.6		5.000+2
519.	32.	7.	-6.	-4.	08	-3.6		5.500+2
449.	36.	8.	-7.	-5.	10	1.8		6.000+2
384.	338.	5.	-4.	2.	09	6.9		6.500+2
323.	112.	1.	0.	-1.	10	11.9		7.000+2
264.	71.	3.	-1.	-3.	13	16.7		7.500+2
209.	98.	1.	0.	-1.	15	21.6		8.000+2
156.	195.	1.	1.	0.	12	24.2		8.500+2